COMMUNICABLE DISEASES INTELLIGENCE

ISSN 0725 - 3141 VOLUME 20 NUMBER 2 22 January 1996

CONTENTS

Editor : Helen Longbottom

COMMONWEALTH DEPARTMENT OF HUMAN SERVICES AND HEALTH

Editorial Advisory Board: Charles Watson (Chair), Margaret Burgess, Scott Cameron, Gavin Frost, Jeffrey Hanna, John Kaldor, Margery Kennet, Christine Robert

Editorial and Production Staff: Margaret Curran,Graeme Oliver, Scott Crerar, Ana Herceg, David Evans, Htoo Myint, Michelle Wood, Kim Moser, Emma Wood, Heather Mortlock

Contributions covering any aspect of communicable diseases are invited. Instructions to authors can be found in CDI 1995; 20: 13.

CDI is produced fortnightly by the AIDS/Communicable Diseases Branch, Department of Human Services and Health, GPO Box 9848 Canberra ACT 2601, Fax: (06) 289 7791 Telephone : (06) 289 1555

Opinions expressed in CDI are those of the authors and not necessarily those of the Department of Human Services and Health or other Communicable Diseases Network - Australia affiliates. Figures given may be subject to revision.

Parts of CDI are also available on the CDI Bulletin Board System on (06) 281 6695 and on Internet through ftp.health.gov.au in directory pub/cdi and in addition, in ADOBE ACROBAT (.pdf) format. Consent for copying in all or part can be obtained from:

Manager, Commonwealth Information Service
Australian Government Publishing Service
PO Box 84 Canberra ACT 2600

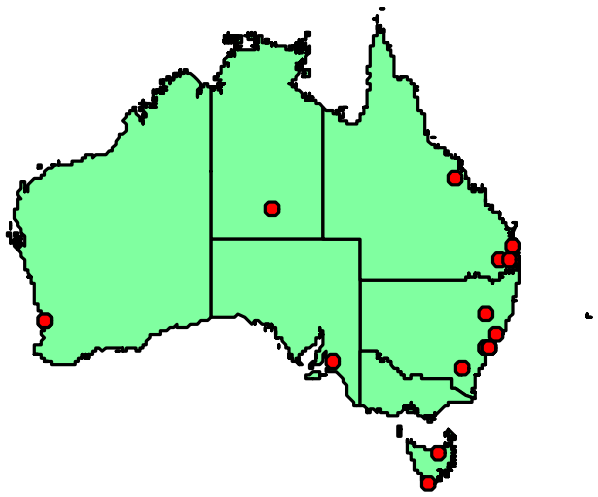
ANNUAL REPORT OF THE *CDI* STERILE SITES LABORATORY REPORTING SCHEME, 1994

Scott Crerar and Kim Moser, AIDS/Communicable Diseases Branch, Department of Human Services and Health

INTRODUCTION

The *Communicable Diseases Intelligence* (*CDI*) Sterile Sites Laboratory Reporting Scheme, LabDOSS, is a passive surveillance scheme based on voluntary reports contributed by a sample of laboratories throughout Australia (Figure 1). LabDOSS commenced in January 1992 after a pilot scheme was run in NSW during 1991. It was adapted from a surveillance scheme entitled the 'pathogen scheme' which attempted to report on all non-viral pathogenic organisms. LabDOSS was an attempt to better characterise the role of invasive organisms by limiting reports to isolates from normally sterile sites. The definition of a normally sterile site is one that does not under normal healthy conditions contain any microorganisms. This includes blood, cerebrospinal fluid, joint fluid, and tissue samples such as spleen, liver and muscle.

Figure 1. Distribution of contributing LabDOSS laboratories



The objectives of the LabDOSS scheme are: to improve the understanding of the epidemiology of disease caused by invasive organisms, monitor trends of invasive disease, identify emerging pathogens, guide direction for further research, and to develop and evaluate public policy based on the surveillance information.

METHODS

Reports of significant bacterial and fungal isolates from normally sterile sites are directly reported by laboratories to *CDI* monthly and entered into an EpiInfo file. Each isolate report includes a laboratory identifier, the date of specimen collection, the organism identification, data on the source of specimen and identification methods. The reports usually contain the residential postcode of the patient, data on the patient's age and sex, and information on the clinical diagnosis and risk factors.

LabDOSS is currently published in alternate issues of *CDI*. LabDOSS *CDI* monthly reports are based on the date of specimen collection. The date of specimen collection gives a better indication of the date of illness than the reporting date and allows more valid interpretation of seasonal trends.

This year's annual report on the LabDOSS scheme varies to that of the 1993 annual report. It is more selective in its content, and when data allowed, there was an attempt to demonstrate trends in invasive disease over the period 1992 to 1994. The quantitative Chi-squared method was used to analyse for trends. Denominators were the total number of isolates in the respective categories analysed.

NOTES ON INTERPRETATION

There are several possible biases in the LabDOSS scheme. Although all but one State or Territory is represented, eastern States and tertiary institutions have relatively high representation, resulting in the potential for geographical, testing and referral pattern biases. The number of isolates reported may vary each month and from year to year depending on the number and type of participating laboratories. In addition, risk factor and clinical information are not consistently provided by laboratories as data are provided by laboratory staff who do not have direct contact with the patient.

TOTAL REPORTS

There was a total of 6832 isolates of significant sepsis reported in 1994. Reports were contributed by 21 laboratories in seven States and Territories (Table 1). Fifty-one per cent (3457) of reports gave information on whether the infection was hospital acquired. Of these, 47% (1625) were classed as hospital acquired.

Source of Isolates

Blood was the most common specimen type reported, accounting for 91% of total isolates. Joint fluid comprised 2.2% of all isolates; cerebrospinal fluid 1.9%, peritoneal dialysate 1.0%; pleural fluid 0.7%; biopsies 0.2% and other tissues 2.8%.

Table 1. Total number of LabDOSS reports for 1994 , by State or Territory and contributing laboratory

State or Territory	Laboratory	Reports
Australian Capital Territory	Woden Valley Hospital, Canberra	373
New South Wales	Gosford Central Coast Hospital Service, Gosford	206
	Institute of Clinical Pathology and Medical Research, Westmead	475
	Prince of Wales Hospital, Randwick	182
	Royal North Shore Hospital, St Leonards	484
	Royal Prince Alfred Hospital, Camperdown	215
	South West Area Pathology Service, Liverpool	672
	John Hunter Hospital, Newcastle	716
Queensland	Nambour General Hospital, Nambour	97
	Ipswich General Hospital, Ipswich	117
	Central Queensland Pathology Laboratory, Mackay	34
	Greenslopes Hospital, Brisbane	113
	Royal Brisbane Hospital, Brisbane	1105
	Drs JJ Sullivan, NJ Nicolaides and Partners, Taringa	246
	Toowoomba Pathology Laboratory, Toowoomba	169
South Australia	Institute of Medical and Veterinary Science, Adelaide	654
Tasmania	Northern Tasmania Pathology Service, Launceston	146
	Royal Hobart Hospital, Hobart	256
Northern Territory	Alice Springs Hospital, Alice Springs	184
Western Australia	Princess Margaret Hospital for Children, Perth	68
	Sir Charles Gairdiner Hospital, Nedlands	327
Total		6832

Class of Isolates

Gram positive organisms comprised the majority of isolates accounting for 53.9% of reports. Gram negative organisms comprised 39.8% of isolates; anaerobes 4.4% and fungi 1.9%. Figures 2 and 3 show the class of isolates reported as a percentage of total isolates from 1992 to 1994. Significant linear trends for both an increase in gram positive organisms ($p < 0.0001$) and fungi ($p = 0.0016$), and a decrease in gram negative organisms ($p < 0.0001$) were shown for this period.

The Top 15 Organisms

The 15 most frequently isolated organisms for 1994 are shown in Table 2. 1992 and 1993 data are shown for comparison. Significant increased linear trends in the percentage of reports over the period 1992 to 1994 were seen for the following organisms: Methicillin resistant *Staphylococcus aureus* ($p < 0.0001$), *Propionibacterium ac-*

Figure 2. Total reports of Gram positive and Gram negative isolates, 1992 to 1994, as a percentage of total isolates

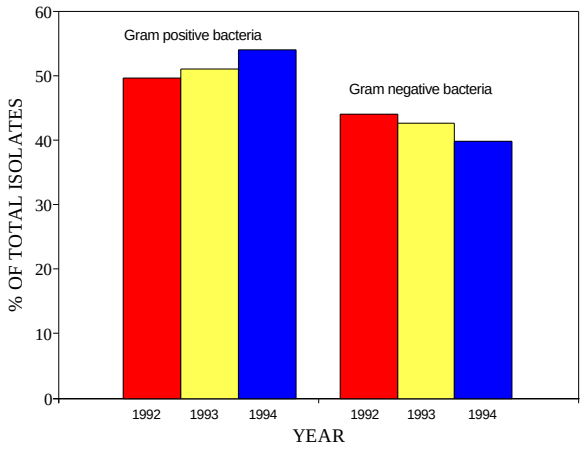


Figure 3. Total reports of fungi and anaerobes, 1992 to 1994, as a percentage of total isolates

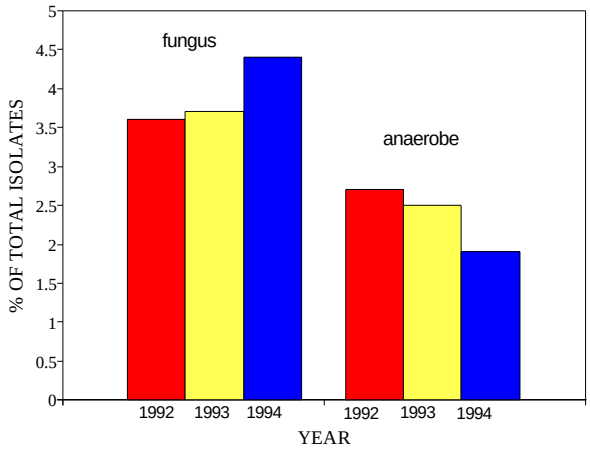


Table 2. Frequently reported isolates and percentage of total reports per year, 1992 to 1994

Organism	1992		1993		1994	
	Reports	% of Total	Reports	% of Total	Reports	% of Total
Escherichia coli	747	16.2	721	17.1	1115	16.4
Staphylococcus aureus	* 780	16.9	749	17.7	1098	16.2
Staphylococcus coagulase negative	629	13.6	694	14.1	1037	15.3
Streptococcus pneumoniae	236	5.1	180	4.3	484	7.1
Pseudomonas aeruginosa	198	4.3	174	4.1	245	3.6
MRSA	18	** 0.4	76	** 1.8	145	** 2.1
Propionibacterium acnes	6	** 0.1	13	** 0.3	141	** 2.1
Enterococcus faecalis	115	2.5	79	1.9	139	2.1
Enterobacter cloacae	87	1.9	72	1.7	116	1.7
Streptococcus Group B	58	** 1.3	54	** 1.3	116	** 1.7
Proteus mirabilis	77	1.7	62	1.5	95	1.4
Streptococcus species	42	** 0.9	50	** 1.2	92	** 1.4
Haemophilus influenzae	134	** 2.9	86	** 2.0	81	** 1.2
Streptocuccus Group A	26	0.6	54	1.3	81	1.2
Candida albicans	77	** 1.7	53	** 1.2	71	** 1.1

* Includes *Staphylococcus epidermidis* isolates
** Statistically significant for linear trend ($p < 0.05$)

nes ($p < 0.0001$), *Streptococcus* Group B ($p = 0.04$) *and Streptococcus* species ($p = 0.03$). Significant decreased trends were seen for *Haemophilus influenzae* ($p < 0.0001$) and *Candida albicans* ($p = 0.004$).

The proportion of MRSA isolates as a percentage of the total *Staphylococcus aureus* isolates also consistently increased during the period 1992 to 1994 (Figure 4). Thus, sterile site isolates of *Staphylococcus aureus* follow a similar trend to that shown in the Northern Territory[1] which demonstrated a proportional increase in all nosocomial MRSA isolates since 1989. Increased trends have also been reported in Western Australia and Tasmania[2].

BLOOD ISOLATES

A total of 6233 significant blood isolates (other than those with a diagnosis of meningitis) were reported in 1994. The age distribution for reports of bacteraemia is shown in Figure 5. Isolates were most commonly reported in the 65 to 74 years and over 75 years age groups.

The Top 15 Isolates

The 15 most frequently reported blood isolates and their percentage of total blood isolates for 1994 are shown in Table 3. Significant increased linear trends in the percentage of blood isolates over the period 1992 to 1994 were seen for Methicillin resistant *Staphylococ-*

Figure 4. MRSA isolates as a percentage of total *Staphylococcus aureus* isolates, 1992 to 1994

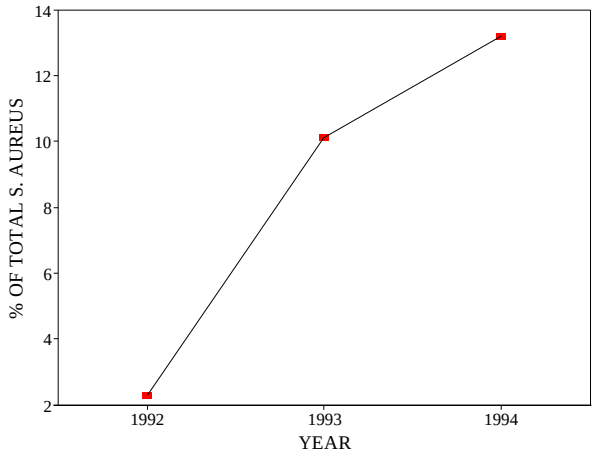


Figure 5. Age distribution of patients with bacteraemia, 1994, as a percentage of total blood

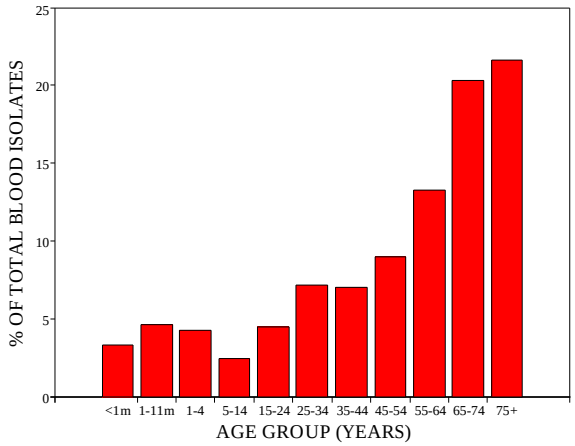


Table 3. Frequently reported blood isolates and percentage of total blood isolates per year, 1992 to 1994

	1992		1993		1994	
Organism	Reports	% of Total	Reports	% of Total	Reports	% of Total
Escherichia coli	721	18.0	676	18.7	1061	17.4
Staphylococcus coagulase negative *	556	13.9	488	13.7	963	15.8
Staphylococcus aureus	646	16.1	599	16.8	918	15.0
Streptocuccus pneumoniae	211	5.3	164	4.6	433	7.1
Klebsiella pneumoniae	135	3.4	147	4.1	244	4.0
Pseudomonas aeruginosa	180	4.5	154	4.3	233	3.8
Propionibacterium acnes	4	** 0.1	9	** 0.3	141	** 2.3
Enterococcus faecalis	105	2.6	67	1.9	129	2.1
MRSA	16	** 0.4	62	** 1.7	125	** 2.1
Enterobacter cloacae	83	2.1	63	1.8	110	1.8
Streptococcus Group B	54	1.4	48	1.4	100	1.6
Proteus mirabilis	72	1.8	56	1.6	82	1.5
Streptococcus species	38	1.0	40	1.1	82	1.3
Acinetobacter species	54	1.4	61	1.7	74	1.2
Streptococcus Group A	24	** 0.6	40	** 1.1	73	** 1.2

* Includes *Staphylococcus epidermidis* isolates

** Statistically significant for linear trend ($p < 0.05$)

cus aureus ($p < 0.0001$), *Propionibacterium acnes* ($p < 0.0001$) and *Streptococcus* Group A ($p = 0.005$) (Figure 6). Significant decreased trends were seen for *Haemophilus influenzae* ($p < 0.0001$) and *Candida albicans* ($p = 0.01$) (Figure 7).

Diagnosis

Information on the diagnosis was provided for 3867 (56.6%) of blood isolates received in 1994. A specific diagnosis was provided in 56.8% of reports, with 28.2% listing 'other' and 15.0% unknown. Gastrointestinal disease was the most commonly reported diagnosis (12.0%), followed by urinary tract infections (10.5%), lower respiratory tract infections (8.6%) and skin cellulitis wounds (7.6%).

Risk Factors

Risk factor information was provided on blood isolates in 44.4% of reports. Of these, 1546 (51.1%) reported immunosuppression, 641 (21.1%) had undergone recent surgery, 455 (15.1%) had a vascular prosthesis, and 302 (12.8%) reported other risk factors.

MENINGITIS ISOLATES

There were 220 cases of meningitis reported to LabDOSS in 1994. This represented 3.2% of total reports and contrasted with 1992 and 1993 in which meningitis reports represented 4.3% and 3.7% of total reports respectively. A significant decreased linear trend was

Figure 6. Reports of MRSA, *Propionibacterium acnes* and *Streptococcus* Group A blood isolates by year, 1992 to 1994

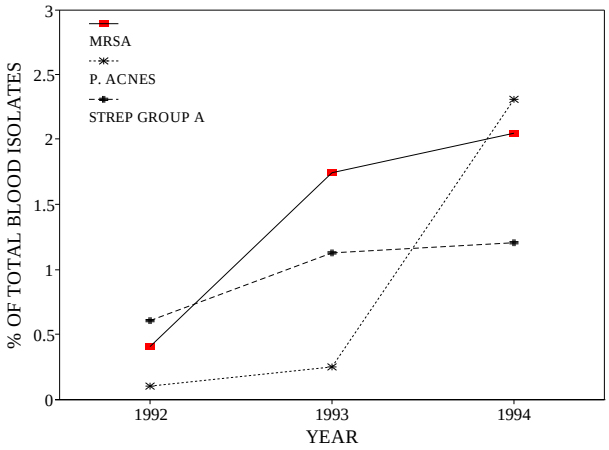


Figure 7. Reports of *Candida albicans* and *Haemophilus influenzae* blood isolates by year, 1992 to 1994

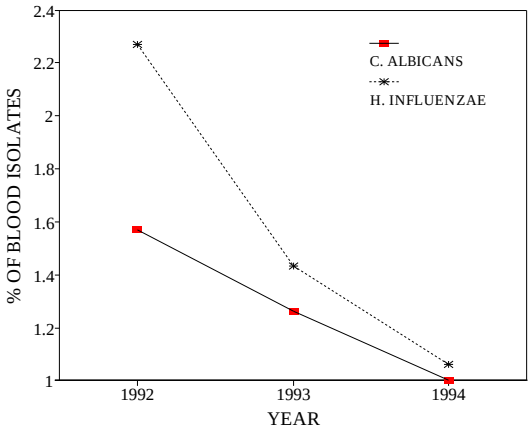


Table 4. Frequently reported meningitis isolates and percentage of total meningitis isolates per year, 1992 to 1994

Organism	1992		1993		1994	
	Reports	% of Total	Reports	% of Total	Reports	% of Total
Neisseria meningitidis	31	15.6	39	25.2	51	23.2
Streptococcus pneumoniae	25	12.6	13	8.4	41	18.6
Staphylococcus coagulase negative *	20	10.1	3	1.9	23	10.5
Cryptococcus neoformans	20	10.5	18	11.6	17	7.7
Haemophilus influenzae	43	** 21.6	31	** 20.0	16	** 7.3
Staphylococcus aureus	11	5.5	9	5.8	13	5.9
Streptococcus Group B	1	** 0.5	3	** 1.9	7	** 3.2

* Includes *Staphylococcus epidermidis* isolates

** Statistically significant for linear trend ($p < 0.05$)

demonstrated for the percentage of meningitis reports over the period 1992 to 1994 ($p = 0.003$).

Table 4 shows the most frequently reported isolates causing meningitis for 1992 to 1994 and their percentage of total meningitis reports. The proportion of *Haemophilus influenzae* isolates decreased over this period (significant for trend, $p < 0.0001$) and is likely the result of the introduction of conjugate *Haemophilus influenzae* type b (Hib) vaccines in 1992 and 1993. A steady decline in Hib cases since 1992 is documented by the National Notifiable Diseases System[3]. Cases of *Streptococcus* Group B increased ($p = 0.05$). The proportion of *Neisseria meningitidis* isolates, although not statistically significant, increased in 1993 and 1994 compared to 1992. The proportion of *Streptococcus pneumoniae* isolates increased in 1994 compared to 1993 (Figure 8).

Haemophilus influenzae

Fourteen of 16 *Haemophilis influenzae* meningitis reports were in children less than 4 years of age.

Nine of sixteen reports were classed as serotype b, with the remainder not having a serotype specified.

Neisseria meningitidis

The highest frequency of meningococcal meningitis reports (13) was in the 15-24 years age group (seven females and six males) (Figure 9). A higher incidence of meningococcal meningitis has been demonstrated in Winter and Spring[4] and the 1994 data confirm this trend with the highest incidence seen in August through to December. The same seasonal pattern for meningococcal infection was mirrored in the National Notifiable Diseases reports for 1994[3] (Figure 10).

Fifteen of 51 meningococcal meningitis reports were classed serogroup B, 12 serogroup C, one serogroup W-135 and one serotype Y.

Cryptococcus neoformans

Eight of 17 cryptococcal meningitis reports were for the 15 to 44 years age group and 15 patients were male. Immunodeficiency was reported in ten cases (all males). Eight patients had HIV infection, and two patients had other forms of immunodeficiency.

Biovariant information was provided for five reports; three were *Cryptococcus neoformans* var. *neoformans* (all

Figure 8. Reports of *Haemophilus influenzae*, *Neisseria meningitidis*, *Streptococcus* Group B and *Streptococcus pneumoniae* meningitis isolates by year, 1992 to 1994

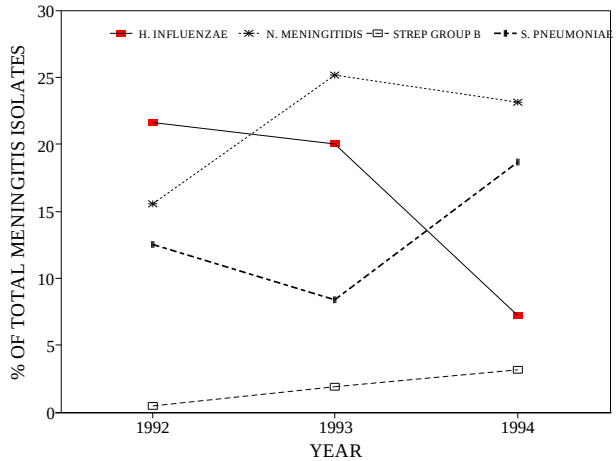


Figure 9. *Streptococcus pneumoniae* and *Neisseria meningitidis* meningitis reports by age group, 1994

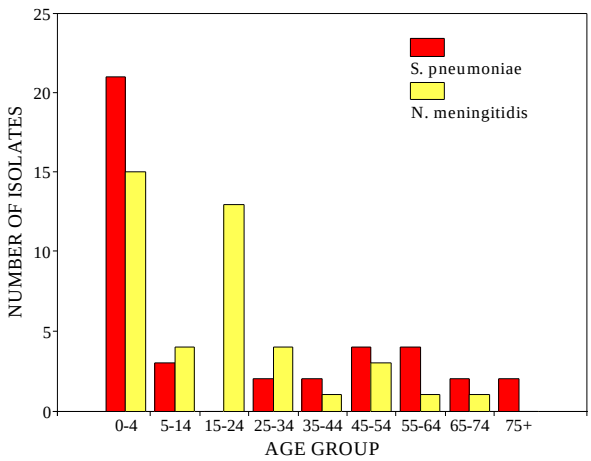
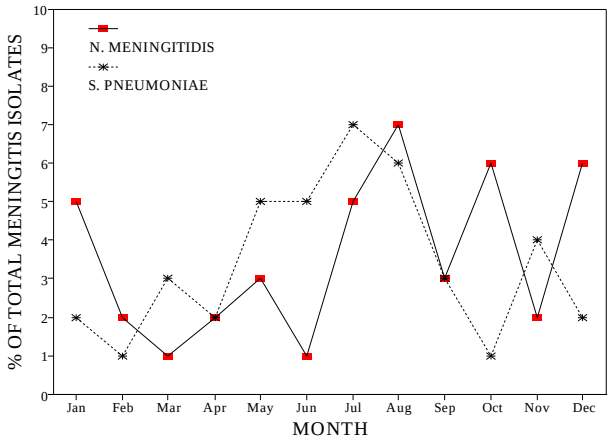


Figure 10. Reports of *Neisseria meningitidis* and *Streptococcus pneumonia* by month, 1994



cases had HIV infection) and two were *Cryptococcus neoformans* var. *gattii*.

Streptococcus pneumoniae

Twenty-one of 41 pneumococcal meningitis reports were for children less than five years of age and sixteen of these were males (Figure 9).

A higher incidence of pneumococcal meningitis has been demonstrated in Winter and Spring[5]. The 1994 data confirm this trend with the highest incidence seen in May through to August (Figure 10).

OTHER SITES

Joint Fluid

One hundred and fifty-one reports of joint fluid isolates were received. The majority of isolates were *Staphylococcus aureus*, accounting for 64.2% of reports. Other isolates included S*taphylococcus* coagulase negative (4.6%), *Streptococcus* Group B (4.0%), Methicillin resistant *Staphylococcus aureus* (3.3%) and *Streptococcus pneumoniae* (3.3%).

Peritoneal dialysate

Sixty-seven reports of peritoneal dialysate isolates were received. Organisms most frequently isolated were *Staphylococcus* coagulase negative (25.4%), *Escherichia coli* (17.9%) and *Staphylococcus aureus* (11.9%).

Pleural Fluid

Forty-six reports of pleural fluid isolates were received. Organisms most frequently isolated were *Staphylococcus aureus* (19.6%), *Staphylococcus* coagulase negative (17.4%), *Streptococcus* species (13.0%) and methicillin resistant *Staphylococcus aureus* (6.5%).

SELECTED CLINICAL CATEGORIES AND RISK FACTORS

Lower Respiratory Tract Infections

A diagnosis of pneumonia was recorded in 491 reports. The majority of isolates were *Streptococcus pneumoniae* which accounted for 52.3% of reports. The proportion of reports attributed to this organism was significantly greater than in 1992 and 1993. Other isolates included *Staphylococcus aureus* (8.1%), *Staphylococcus* coagulase negative (6.3%), *Escherichia coli* (5.3%), *Haemophilius influenzae* (3.9%) and *Klebsiella pneumoniae* (2.9%), none of which was reported in significantly different proportions from previous years.

Risk factors for pneumonia were recorded in 26.5% of reports, with the most common risk being malignancy (26.9%), followed by thoracic surgery (8.5%) and neutropaenia (8.5%).

HIV/AIDS

There were 66 reports of HIV / AIDS as a risk factor for sepsis. The majority of cases (72.7%) were reported in the 25 to 44 year age groups and 62 cases were male.

Table 5. Organism by type of surgery (expressed as a percentage of total isolates in each category), 1994

	Type of Surgery					
	Abdominal	Thoracic	Orthopaedic	Neurological	Unrinary Tract	Vascular
Organism	n=256	n=79	n=72	n=64	n=61	n=39
Enterococcus faecalis	4.7				6.6	7.7
MRSA		17.7	8.3			
Staphylococcus aureus	12.1	26.6	36.1	17.2	11.5	17.9
Staphylococcus coagulase negative *	9.3	7.6	9.7	21.9		12.8
Streptococcus Group B					4.9	
Enterobacter cloacae			5.6			
Escherichia coli	17.6	6.3	5.6	6.3	32.8	10.3
Klebsiella pneumoniae				4.3		
Proteus mirabilis					4.9	
Pseudomonas aerginosa	4.7	11.4		7.8		5.1

* Includes *Staphylococcus epidermidis* isolates

The three most commonly reported organisms were *Staphylococcus aureus* (24.2%) *Staphylococcus* coagulase negative (16.6%) and *Cryptococcus neoformans* (12.0%).

Endocarditis

There were 99 cases of endocarditis reported, 72 involving a native valve and 27 cases a prosthetic valve. Eighty-two per cent of reports were for patients over 44 years of age. The male to female sex ratio for prosthetic valve endocarditis was 1:1 whereas that for native valve endocarditis was 2.5:1.

The most frequently reported organisms in native endocarditis were *Staphylococcus aureus* (28.6%), *Streptococcus sanguis* (12.5%), *Enterococcus faecalis* (9.7%) and *Streptococcus* species (8.3%). Native valve infection was more frequently attributed to *Staphylococcus aureus* (25.9%), *Streptococcus sanguis* (14.8%), *Staphylococcus* coagulase negative (14.8%) and methicillin resistant *Staphylococcus aureus* (11.1%).

Surgery

There were 641 reports of organisms from sterile sites in patients with a risk factor of recent surgery. Abdominal surgery was most frequently reported (39.9%), followed by thoracic (12.3%), orthopaedic (11.2), neurological (10.0%), urinary tract (9.5%), and vascular surgery (6.1%). Surgery of an unspecified nature represented 10.9% of reports. Table 5 shows the five most frequently reported isolates for the different types of surgery.

CONCLUSIONS

This is the first report that has both analysed and interpreted data from the LabDOSS scheme. Roberts[6] reviewed LabDOSS data for 1992 and 1993 and concluded that the scheme appeared to be representative as it supported known trends in infectious disease, but in order to meet all its objectives stated that it would require continued expansion.

Data presented in this report may reflect current trends in invasive disease. The apparent decline in the occurrence of *Haemophilus influenzae* meningitis reports illustrated has been supported by other surveillance systems. Known seasonal patterns of pneumococcal and meningococcal meningitis were also demonstrated. The trend for increased Gram positive and decreased Gram negative isolates from sterile sites could be valid and may largely result from the greater use of antibiotics directed against Gram negative organisms. An increase in the proportion of MRSA isolates to total *Staphylococcus aureus* isolates has been reported in various hospitals[1,2] throughout Australia and sterile sites data may have reflected this trend.

Other trends described in this report are more difficult to validate due to the unknown representativeness of LabDOSS and a lack of available confirmatory data or appropriately directed research. It should be noted that a recent evalution of the LabDOSS scheme (Crerar, unpublished)* revealed the most frequently cited reason given by respondents for its limited use was uncertain representativeness. It is clear therefore, that greater representation is paramount before meaningful conclusions can be consistently derived from the present system. Consistency and completeness in reporting are also crucial for the success of such a system, and in this respect, greater focus on specific organisms and fields of information has been suggested.

The public health importance of invasive sterile sites disease is unquestionable. A representative sterile sites surveillance system is therefore necessary for accurate documentation of the epidemiology of invasive disease. Such a system can then by utilised nationally to confidently detect trends, guide policy and assess public health interventions. However, appropriate procedures to streamline the data collection process and to facilitate a broader reporting base are required. Further discussions on methods for data collection and dissemination are needed amongst relevant stakeholders.

ACKNOWLEDGEMENTS

The contribution of all LabDOSS laboratories is gratefully acknowledged, as is the assistance of Margaret Curran, Htoo Myint and Heather Mortlock.

* A report on the evalutaion of LabDOSS will be distributed to laboratories and published at a later date.

REFERENCES

1. Arthur A. Trends in MRSA Infections. *Northern Territory Comm Dis Bull* 1995; **8**: 16-17.

2. Turnidge JD, Nimmo GR and Francis G. Evolution of resistance in *Staphyloccus aureus* in Australian teaching hospitals. *MJA* 1995; **164**: 68-71.

3. Hargreaves J, Longbottom H, Myint H, Herceg A, Oliver G, Curran M and Evans D. Annual report of the National Notifiable Diseases Surveillance System, 1994. *Comm Dis Intell* 1995; **19**: 542-575.

4. Cartwright KAV, Jones DM, Smith AJ, Stuart JM, Kaczmarski EB, Palmer SR. Influenza A and meningococcal disease. *Lancet* 1991; **338**: 554-557.

5. Musher DM. *Streptococcus pneumoniae.* In: Mandell, GL, Bennett, JE, Dolin, R, editors. *Principles and practice of infectious diseases,* 4th ed. New York: Churchill Livingston, 1995:1811-1826.

6. Roberts LA. Laboratory database of organisms from sterile sites LabDOSS. Bound with: Roberts LA. *Master of applied epidemiology* (thesis). Canberra: Australian National University, 1994.

LABDOSS PERITONEAL DIALYSATE ISOLATES, 1992 TO 1994

Sheila A Beaton[1,2] *and Leslee A Roberts*[1,3]

Abstract

Twelve laboratories participating in the LabDOSS scheme submitted 250 reports of isolates from peritoneal dialysate fluids over a three year period. There were 41 species represented in the 250 reports with 65% Gram positives, 29% Gram negative, 4% fungi and 2% anaerobes. The 250 reports represented infection in 164 individuals. Approximately 73% of isolates were from patients over 45 years of age, which follows the same pattern as the total number of patients on peritoneal dialysis. The LabDOSS data support current knowledge on Chronic Ambulatory Peritoneal Dialysis associated peritonitis. Continued surveillance will allow further analysis of the pattern of these infections.

Introduction

The *Communicable Diseases Intelligence* (*CDI*) Laboratory Database of organisms from normally sterile sites, LabDOSS, began in 1992. LabDOSS is a laboratory based sentinel surveillance scheme. In addition to contributing to national surveillance the scheme also enables reporting laboratories to maintain and analyse their own database using Epi Info software.

The LabDOSS scheme had considerable early growth, with 14 participating laboratories in its first year, 1992 and 21 by 1994.

This is the first presentation in *CDI* of peritoneal dialysate data collected by the LabDOSS Scheme. This article provides data from the first three years of the scheme.

Methods

Laboratories provide data in computerised format utilising the LabDOSS system which is written in Epi Info. Each report includes a laboratory identifier, the date of specimen collection, the organism identification, data on the source of the specimen and identification methods. The reports usually contain the residential postcode of the patient, data on the patient's age and sex, and information on the clinical diagnosis and risk factors; relevant comments may also be included. Coded specimen and patient identifiers are also included to enable further follow-up with laboratories, as required, and the deletion or amalgamation of duplicate reports.

All data on peritoneal dialysate fluid isolates received by the LabDOSS Scheme during the period January 1992 to December 1994 were analysed. Reports were only included for analysis where the fluid was clearly identified as a peritoneal dialysate. Any duplicate reports (defined as the same isolate within a week of the first notification) were deleted as were multiple reports for the same infection.

EpiInfo version 5 was used for data analysis[1].

Figure 1. Total LabDOSS reports, 1992 to 1994, by month of specimen collection

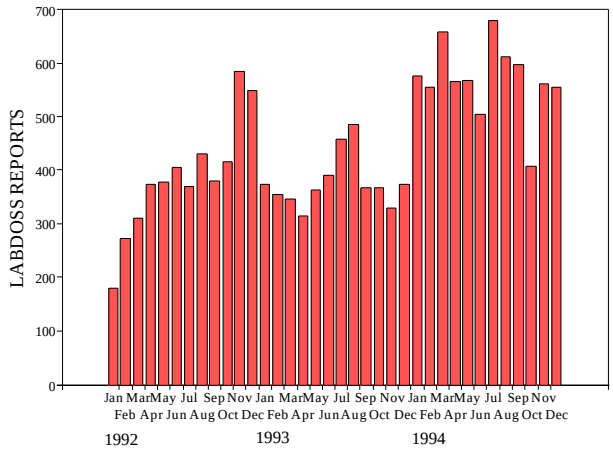
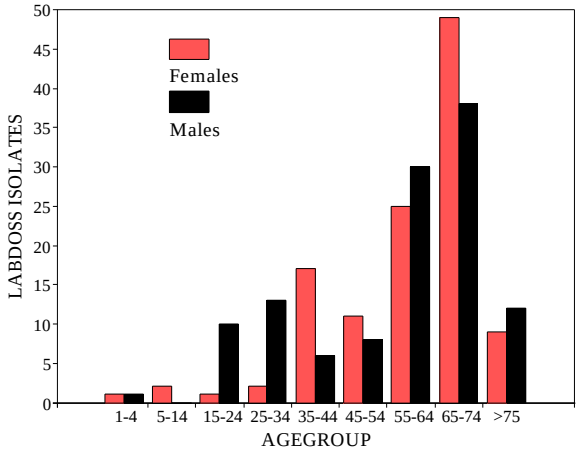
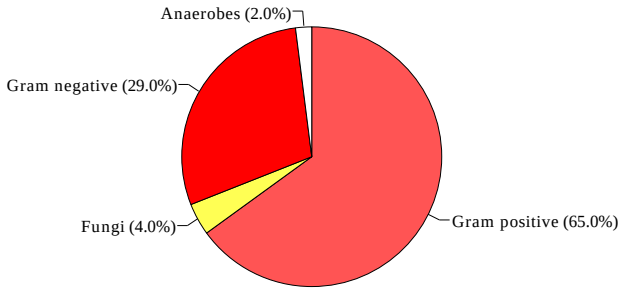


Figure 2. Peritoneal dialysate isolates, 1992 to 1994, by age group and sex



1. National Centre for Epidemiology and Population health, Australian National University, ACT.
2. Infectious Diseases Unit, Department of Health & Community Services, PO Box 4057, Victoria, 3001.
3. previously the Commonwealth Department of Human Services and Health.

Figure 3. Peritoneal dialysate isolates, 1992 to 1994, by organism class (n=250)



Results

There was an increase in the number of monthly reports received by the LabDOSS scheme during the period 1992 to 1994 reflecting the growth of the scheme during this time (Figure 1).

There were 250 reports of isolates from peritoneal dialysate fluids received from 12 laboratories over the 3 year period, representing 1.6 % of total LabDOSS reports. Due to the specialised nature of peritoneal dialysis, reports of isolates were not received from all participating laboratories.

Approximately 73% of peritoneal dialysate isolates were from patients over 45 years of age, with a peak in the 65 to 74 year age group (Figure 2). Only 4 reports were received for children under 15 years of age.

Overall both sexes were equally represented (male:female ratio 1.0:1.0). However variations were seen in several age groups, males being more commonly reported than females in the 15 to 34 year age group (male:female ratio 8.0:1.0) and females being more frequently reported for the 35 to 44 year age group (male:female ratio 1.0:2.5) and the 65 to 74 year age group (male:female ratio 1.0:1.25).

A total of 41 species was represented in the 250 reports received. Gram positive isolates were most commonly reported, followed by Gram negative isolates (Figure 3). Fungi and anaerobes were less commonly reported.

The *Staphylococci* were the most commonly represented genus amongst the Gram positive organisms, coagulase negative *Staphylococcus* being most commonly reported, followed by *Staphylococcus aureus* (Table 1).

Coagulase negative *Staphylococcus* was the predominant organism in all age groups, accounting for approximately 30% of all reports for patients in the 25 to 34 year group and over.

Table 1. Gram Positive isolates from peritoneal dialysates, 1992 to 1994

Organism	Number	%
Coagulase negative *Staphylococcus*	93	57
Staphylococcus aureus	40	25
Alpha haemolytic *Streptococcus*	10	6
Enterococcus faecalis	5	3
Streptococcus species	3	2
Corynebacterium species	2	1
Bacillus species	2	1
Enterococcus species	2	1
Bacillus cereus	1	1
Bacillus subtilis	1	1
Group B *Streptococcus*	1	1
Group D *Streptococcus*	1	1
Micrococcus species	1	1
Lactobacillus species	1	1
Total	163	100

A wide range of organisms was represented in the Gram negative group, *Escherichia coli* being the most commonly reported species (Table 2).

There were nine reports of yeast / fungi (4.0% of total reports); 4 *Candida parapsilosis*, 3 *Candida albicans*, 1 *Candida* species and 1 *Fusarium* species.

Table 2. Gram negative isolates from peritoneal dialysates, 1992 to 1994

Organism	Number	%
Escherichia coli	23	32
Pseudomonas aeruginosa	10	14
Acinetobacter species	7	10
Klebsiella pneumoniae	6	8
Enterobacter cloacae	5	7
Klebsiella oxytoca	3	4
Pseudomonas species	3	4
Enterobacter species	2	3
Serratia marcescens	2	3
Alcaligenes faecalis	1	1
Camplylobacter jejuni	1	1
Citrobacter freundii	1	1
Moroxella species	1	1
Morganella morganii	1	1
Neisseria mucosa	1	1
Proteus mirabilis	1	1
Proteus species	1	1
Providencia species	1	1
Pseudomonas fluorescens	1	1
Serratia species	1	1
Xanthomonas maltophilia	1	1
Total	73	100

Table 3. Peritoneal dialysate organism class by age group and sex (Number of reports with number of different species in parentheses)

Age group (years)	Males				Females			
	Gram positive	Gram negative	Fungi	Anaerobe	Gram positive	Gram negative	Fungi	Anaerobe
1 - 4		1			1			
5 - 14						1		1
15 - 24	8 (2)	1	1		1			
25 - 34	11 (4)	1	1		1	1		
35 - 44	5 (2)	1			14 (4)	3 (3)		
45 - 54	5 (3)	3 (3)			9 (3)	2 (2)		
55 - 64	18 (6)	10 (6)	1	1	15 (2)	8 (6)		2 (2)
65 - 74	22 (4)	15 (8)	1		31 (9)	15 (9)	2 (2)	1
75 +	6 (5)	6 (6)			5 (2)	2 (2)	2 (2)	
Unknown *	7 (3)	1	1		3 (2)	2 (2)		
Total	82	39	5	1	80	34	4	4

* one Gram positive from unknown sex

Five reports of anaerobes (2% of total) were received; 3 *Bacteroides* species and 2 *Bacteroides fragilis.*

The diversity of organisms reported increased with age group. The greatest variety of organism was reported for the 65 to 74 year age group, a total of 87 reports consisting of 25 different species (Table 3) (some species were common to both sexes).

The 250 reports represented infection in 164 individuals. Forty-eight patients (29%) had multiple episodes of sepsis reported over the 3 year period. One individual who had 12 episodes of sepsis in 13 months reported *Staphylococcus epidermidis* on six occasions, *Pseudomonas aeruginosa* twice, *Streptococcus* species once and one episode of a polymicrobic infection *(Bacillus cereus, Enterobacter cloacae* and *Enterococcus faecalis*).

Polymicrobial infections were seen in a total of seven patients, five of whom were over 60 years of age. Three of the seven polymicrobic infections involved organisms of faecal origin.

Discussion

The *CDI* LabDOSS scheme is the only scheme collecting national data on infections related to peritoneal dialysis. The Australian and New Zealand Dialysis and Transplant Registry collate data on patients on dialysis but only record peritonitis where it is a cause of death.

Peritonitis is the major complication of Chronic Ambulatory Peritoneal Dialysis (CAPD). It occurs at a rate of about one episode per patient per year, with a range from three or more episodes per year to less than one every 2 years[2]. Forty-five percent of CAPD patients develop peritonitis at least once during their initial 6 months on CAPD. This increases to 60 - 70 % during the first year. Recurrent peritonitis occurs in 20-30 % of patients and is one of the most common reasons for discontinuation of CAPD. A small proportion of patients seem to have an unusually high frequency of peritonitis. This may be partially attributed to faulty aseptic technique when self-administering CAPD.

The age group distribution reported here for patients with peritonitis is similar to that for the total number of patients on peritoneal dialysis (Australia and new Zealand Dialysis and Transplant Registry, personal communication). Similarly the peak reports for males with peritonitis reflects the age group distribution of all males on CAPD. The peak for females on peritoneal dialysis was the 55 to 64 year age group, however the peak for notification of infection was in the 65 to 74 year age group.

The total number of patients on CAPD increases with age as does the number from whom organisms were isolated. However for the older age groups proportionately more individuals experience peritonitis, than do their yourger counterparts. It is possible that in the older age group, patients are less able to handle the manipulations involved in peritoneal dialysis leading to more infection. It would appear that a disproportianate number of males in the 15 to 34 year age group experience peritonitis than do males in other age groups. This may indicate that males in this group are less fastidious with the techniques involved with peritoneal dialysis, resulting in infection. By contrast the peak age for females with peritonitis is 65 years and over.

The Australian data support findings from overseas studies that the origin of infection in most cases appears to be contamination of the catheter by common skin organisms[2]. Most studies have shown that Gram-positive organisms make up 60 - 80% of isolates, most commonly coagulase negative *Staphylococci* followed by *Staphlylococcus aureus, Streptococcus* species and *Corynebacterium* species. Gram-negative organisms make up 15 - 30 % of isolates with *E. coli* being the most common, followed by *Klebsiella/Enterobacter, Proteus*

and *Pseudomonas* species. This pattern is reflected in the Australian data.

Although our data show that the majority of reports were in patients over 55 years of age, extremes of age have not been shown to increase the risk of peritonitis. However older patients have shown a higher rate of *Staphylococcus epidermidis* infection[3]. This phenomenon is not seen in our Australian data where the number of *Staphylococcus epidermidis* reports account for approximately one third of reports in all agegroups from 25 to 34 years.

As the LabDOSS scheme utilises sentinel laboratories there is bias in the collection of the data. A variety of hospital and laboratory types are represented in the LabDOSS scheme but not all hospitals with dialysis units are involved. Intepretation of the data may be biased by the representation of the participating laboratories.

Although the LabDOSS database for peritoneal dialysate isolates is relatively small the data support current knowledge regarding CAPD associated peritonitis. There is an increase in the diversity of organisms in patients older than 55 years with 25 different species reported in the 65 to 74 year age group. Education programs may need to target young males and older persons on the techniques required for successful, infection free peritoneal dialysis. The advantage of examining such data from a national perspective is that significant outbreaks of rare conditions affecting more than one State may be more readily recognised.

Continuing surveillance by the LabDOSS scheme will allow further analysis of these trends.

Acknowledgements

We would like to thank *CDI* and the *CDI* participating laboratories for the provision of data. We would also like to thank Dr Mahomed Patel, NCEPH, for his assistance in the preparation of this article.

References

1. Dean AD, Dean JA, Burton JH, Dicker RC. Epi Info Version 5: a word processing, database and statistics system for epidemiology on microcomputers. Centers for Disease Control, Atlanta, Georgia, USA, 1990.
2. Levison M, Bush LM. Peritonitis and other intra-abdominal infections. In *Principles and practice of infectious diseases*. 3rd Edition. Churchill Livingstone, 1990: 636-670.
3. Holley JL, Bernadini J, Perlmutter JA, Piraino B. A Comparison of infection rates among older and younger patients on continuous peritoneal dialysis. *Perit Dial Int* 1993; **14**: 66-69.

CDI READERSHIP SURVEY

Ana Herceg AIDS/Communicable Diseases Branch, Department of Human Services and Health

Abstract

The *Communicable Diseases Intelligence* (*CDI*) readership survey was conducted in 1995 to determine who the current readers of *CDI* are, what proportion of readers use *CDI* in a professional capacity and whether the content and current distribution system of *CDI* meet the needs of the readership. The survey found that the majority of readers are medical practitioners, microbiologists, nurses and environmental health officers and 56% of respondents use *CDI* in their work. The articles were the most frequently read section of *CDI*, followed by notices to readers and overseas briefs. Twenty six per cent of respondents suggested other information they would like to see published in *CDI* and 8% suggested changes to the layout of *CDI*. While a large proportion of survey respondents already use *CDI* for their work, some changes may improve the usefulness of *CDI* to readers.

Background

Communicable Diseases Intelligence (*CDI*) has been in existence since 1977, and has been in itscurrent form since 1991. It is a joint publication of the Commonwealth Department of Human Services and Health and the Communicable Diseases Network of Australia and New Zealand. *CDI* is distributed free and currently has a mailing list of around 5000 including approximately 500 recipients outside Australia.

CDI aims to provide timely information about communicable diseases in Australia to inform and assist those with responsibility for their control in a wide variety of settings.

A readership survey was conducted in 1995 to determine the occupation of readers and the proportion of them who use *CDI* in their work. The survey also aimed to determine whether the content and distrbution system meet the needs of subscribers.

Methods

A self completion questionnaire, covering letter and reply paid envelope was sent to 4872 recipients of *CDI* with the 10 July 1995 issue. Requests for a response to the survey were printed in this issue and the issues preceeding and following. The questionnaire contained questions for the respondents on their reasons for reading *CDI*, the sections of *CDI* they read and any changes to *CDI* they would like to suggest. Data entry and analysis of the survey was done in Epi Info version 6.2.

A telephone survey of non-responders was conducted after completion of the initial survey to determine whether non-responders differ systematically from responders. This survey was conducted in November 1995. A random sample of 416 Australian residents on the *CDI* mailing list was selected. When the respondents were reached, they were asked if they had already completed the survey, and if they had not, a shortened version of the survey was administered over the telephone. Comparisons of the responder and non-responder groups were done using Epi Info version 6.2.

Results

Of the 4872 copies of the survey sent out, 1476 (30%) were returned completed by the beginning of October. One questionnaire was returned without being filled in. An additional 32 questionnaires were received later than the cut-off date and were not included in the analysis. The non-responder survey, although it also had a low response rate of 44%, found no significant differences between responders and non-responders.

Respondents

Respondents were from all States and Territories and 82 (6%) were from outside Australia (Table 1). Twenty nine per cent of overseas respondents were from New Zealand with others from Europe, North and South America, Asia, Pacific Islands and Africa.

Table 1. Residence of *CDI* readership survey respondents

Residence of respondent	Number	%
Australian Capital Territory	89	6
New South Wales	422	29
Northern Territory	28	2
Queensland	269	18
South Australia	102	7
Tasmania	50	3
Victoria	324	22
Western Australia	99	7
Outside Australia	82	6
No information	11	1
Total	1476	100

Thirty-seven per cent of respondents described themselves as medical practitioners, with microbiologists, nurses and environmental health officers comprising an additional 37% (Table 2). The most common type of work in which respondents spent the greatest proportion of their working time was general practice (21%), followed by clinical microbiology (10%), environmental health (10%) and administration and management (9%).

Table 2. Profession of *CDI* readership survey respondents

Profession of respondent	Number	%
Medical practitioner	542	37
Microbiologist	252	17
Nurse	160	11
Environmental health officer	128	9
Public health practitioner	61	4
Epidemiologist	49	3
Veterinarian	41	3
Librarian	31	2
Academic	19	1
Pharmacist	18	1
Scientist	15	1
Journalist	14	1
Student	12	1
Entomologist	11	1
Other	121	8
No information	2	0
Total	1476	100

Responses

The majority of respondents (72%) said they read *CDI* every issue, 24% read it most issues, 3% read it occasionally and less than 1% never read it. Thirty three per cent of respondents said they were the only person to read their issue of *CDI*, 21% said one other person read it, 32% said 2-4 other people read it and 13% said 5 or more other people read it.

When asked why they receive *CDI*, 56% of respondents said it was for use in their work, 30% as a reference source, 13% for general interest and 1% did not respond to the question. Eighty-four per cent of respondents keep their copies of *CDI* for further reference.

The articles were the most frequently read section of *CDI* with 52% of respondents always reading them. These were followed by editorial comments (41%), notices to readers (38%), overseas briefs (38%), the annual report of the National Notifiable Diseases Surveillance System (NNDSS) (34%), HIV / AIDS surveillance reports (31%) and fortnightly reports from the NNDSS (30%) . Less frequently read sections of *CDI* were influenza surveillance reports (read always by 24% of respondents), the annual report of the *CDI* Virology and Serology Reporting Scheme (LabVISE) (21%), LabVISE fortnightly reports (19%), Australian encephalitis surveillance reports (16%), Australian Sentinel Practice Research Network reports (15%), the annual report of the *CDI* Sterile Sites Surveillance Scheme (LabDOSS) (12%) and fortnightly LabDOSS reports (10%).

Twenty six per cent of respondents suggested other information they would like to see published in *CDI*. Fifty eight per cent did not suggest changes and 17% did not respond to the question. Suggested information included review articles, antibiotic resistance information, more overseas and travel health information and new policy and treatment information. Additional suggestions included more information on food and water borne illness, more clinical information, improvements to or explanations of data collected, extracts from or references to other published material, more on public health practice and / or disease control, nosocomial infection information, occupational exposures to infectious diseases, information on specific diseases and information specific for general practitioners, the media and the general public.

Eight per cent of respondents suggested changes to the layout of *CDI*. These comments included better distinction between the sections of Communicable Diseases Surveillance, starting articles at the top of the page and including abstracts. Additional comments included putting more detail in the contents page, including author contacts, including more graphs, photographs, using colour, changing the size of *CDI* and changing the packaging for postage.

The majority of respondents (90%) preferred to receive *CDI* as a printed journal. Others nominated email (3%), internet (4%) or bulletin board (1%) access or did not respond to the question (3%).

Most respondents found *CDI* 'often useful' (66%), while others said it was 'occasionally useful' (32%). Two respondents said *CDI* is 'never useful' and two per cent did not respond to the question.

Respondents read a number of other related journals, in particular the *Medical Journal of Australia* (Table 3).

Table 3. Other journals *CDI* readership survey respondents read

Journal respondents read	Number	%
Medical Journal of Australia	827	56
Australian Journal of Public Health	312	21
State or Territory public health or communicable diseases bulletin	508	34
Australian HIV Surveillance Report	282	19
Communicable Disease Report	132	9
Weekly Epidemiological Record	188	13
Morbidity and Mortality Weekly Report	356	24
National *Salmonella* Surveillance Scheme quarterly reports	164	11

Discussion

This *CDI* readership survey showed that, as expected, the majority of readers are directly involved in communicable disease control in some way, and many use *CDI* to assist this work. It was unexpected to find, however,

that 20% of readers are general practitioners. While we recognise that primary care is probably the most important facet of communicable disease control, it was previously thought that *CDI* was more likely to be used by health authorities, hospitals and laboratories.

The use of *CDI* in respondents' work was high, but it is clear that some sections of *CDI* are more important to readers than others. Articles, editorial comments, notices to readers, overseas briefs and the National Notifiable Diseases Surveillance System are the most frequently read sections of *CDI*, while some of the surveillance schemes, in particular the *CDI* Sterile Sites Surveillance Scheme are less important to most readers.

Although the survey response rate was low, the non-responder survey did not identify any major differences between responders and non-responders. It is likely however that non-responders (to both surveys) may find *CDI* less useful than responders.

The number of suggestions for additions and improvements to *CDI* implies that some changes could be made to better meet the needs of *CDI* readers. These changes would include both content and layout. Current distribution methods appear to be adequate for the majority of readers.

Aknowledgements

Jenny Hargreaves, Helen Longbottom, Margaret Curran and Kim Moser all contributed to the development and conduct of this survey.

EDITORIAL: *CDI* - MOVING AHEAD

Dr Helen Longbottom, Editor, Communicable Diseases Intelligence

The *Communicable Diseases Intelligence (CDI)* readership survey (page 39) has both encouraged the *CDI* production team and brought to our attention the need for some changes to our publication. Most encouraging were the number of our readers who use the publication in their work and the many positive comments we received with survey responses. Despite this we found that we could be doing more to meet the needs of our readers. This includes aspects of both the content and the layout of *CDI*.

There have been recent changes in the national and international arenas of communicable diseases which may impact on *CDI*. At the national level the Chief Health Officers of the Commonwealth, States and Territories and the Australian Health Minister's Advisory Council have endorsed a project to develop a National Communicable Diseases Surveillance Strategy. The strategy aims to provide a coordinated approach to communicable disease surveillance and control in Australia. The World Health Organization has recently established the new Division of Emerging, Viral and Bacterial Diseases Surveillance and Control which aims to strengthen the international capacity to deal with communicable diseases. Emerging and re-emerging diseases in particular have become topical. We hope that *CDI* will be able to encompass these developments.

You may have noticed some changes to *CDI* already. Last issue we announced the formation of the *CDI* editorial advisory board which will provide expert advice to the editorial staff. In this issue the layout of the Communicable Diseases Surveillance section has changed. These changes have occurred as part of an ongoing evaluation process of *CDI* and the work of the team which produces it. In addition, *CDI* is now accessible electronically via the Department of Human Services and Health's World Wide Web site on (http://www.health.gov.au).

We would appreciate feedback from readers on any changes we make - the only way we can gauge whether we are meeting your needs is for you to tell us. We would also like to encourage readers to provide feedback on the content of *CDI* in the form of correspondence for publication. Selected letters will be published in a new *Correspondence* section.

CDI aims to provide timely information about communicable diseases in Australia to inform and assist those with responsibility for their control in a wide variety of settings. I hope we can improve our capacity to do this and that readers continue to provide us with feedback on how well we are meeting this aim.

OVERSEAS BRIEFS

The following information has been provided by the World Health Organization in the past fortnight.

Influenza in the Northern Hemisphere

Influenza A epidemics continue to be reported from the Czech Republic (H_3N_2), Denmark (H_3N_2), Germany (predominantly sub-type H_3N_2, some H_1N_1), France (H_3N_2 and H_1N_1). Particulaly high morbidity rates of 747 to 947 per 10,000 population have been recorded amongst children in parts of the Russian Federation and former USSR (Influenza A H_3N2, H_1N_1 and influenza B).

Yellow fever

The following areas of Mali have been removed from the infected area list: Kita Cercle, Kati Cercle and Kolokani Cercle.

CDI NOTICES TO READERS

CDI electronic distribution on World Wide Web site

Communicable Diseases Intelligence is now accessible in electronic format via the Department of Human Services & Health's World Wide Web (WWW) site (*http://www.health.gov.au*). It is also available directly from the Department's FTP site as reported in *CDI*; **20**: 14.

The format of the *CDI* home page includes a section on the text and tables available in ASCII format, and a section on the availability of *CDI* in Adobe Acrobat (pdf) format.

Text and Tables of *CDI*

- Text from *CDI* articles and communicable diseases surveillance are in CDI??TXT.N*;
- Virology and Serology Reporting Scheme tables are in CDI??VIR.N*;
- National Notifiable Diseases Surveillance System tables are in CDI??NND.N*;
- Australian Sentinel Practice Research Network (ASPREN) tables are in CDI??ASP.N*;
- Annual Reports of the National Notifiable Diseases Surveillance System are in CDI??ANN.NOT;
- Annual Reports of the Virology and Serology Reporting Scheme are in CDI??ANN.VIR;
- Annual Reports of the Sterile Sites Laboratory Reporting Scheme are in CDI??ANN.DOS;

Where ?? is the year, and * is the *CDI* issue number, for example CDI95TXT.N22 is the text from issue number 22.

PDF/Adobe Acrobat format

Issues of the full version of *CDI*, including graphs, charts and tables, are in Adobe Acrobat format (.PDF - portable document format). This version of *CDI* requires Adobe Acrobat Reader which is available free of charge from this site. The Reader will allow you to view, search and print but not to change the original copy.

The naming convention used for this format of *CDI* is CDI*.PDF where * is the volume and issue number (and, if followed by A or B, denotes a part of the same issue), for example CDI1922A.PDF is volume 19, issue no. 22, part A.

To access the Department's world wide web (WWW) site use *http://www.health.gov.au* .

Reminder: Review of the role of laboratories in communicable disease surveillance and control

An invitation to make submissions

A Review is being conducted into the role of laboratories in the surveillance and control of communicable diseases in Australia. The Review constitutes part of the detailed National Communicable Diseases Surveillance Strategy which has been endorsed by the Australian Health Ministers' Advisory Council (AHMAC) and is being developed on behalf of the Chief Health Officers of Australia.

You are invited to make a submission to the Review process. Further information including terms of reference to be addressed can be obtained by calling (06) 289 8351 or by faxing a request to (06) 289 7791. Please include your name, address and telephone number.

How To Make Your Submission

Please make your submission in writing, or on audio tape, and include your name, address and phone number.

Please send your submission to:

Ms Margaret Curran, Secretary
Laboratory Sub-Committee
AIDS / Communicable Diseases Branch
MDP 15

Department of Human Services and Health
GPO Box 9848
Canberra ACT 2601

The closing date for receipt of submissions is **7 February 1996**.

All submissions will be held in a register of submissions that can be accessed by the public. If you would like your submission to be treated as confidential, please indicate this clearly (for example by marking your written submission 'CONFIDENTIAL'). However submissions may be subject to release under the Freedom of Information Act 1992.

COMMUNICABLE DISEASES SURVEILLANCE

National Notifiable Diseases Surveillance System, 24 December 1995 to 6 January 1996

There were 623 notifications received for this two week period (Tables 1, 2 and 3). This is less than one-sixth of the total received for the immediately preceding four week period. No notifications were received from Queensland in the current period. Even allowing for this, the total for this period is quite low in comparison to recent notification figures, and probably reflects a higher level of delay in transmission of reports at this time of the year than at other times. The figure of selected notifiable diseases compared with historical data which usually appears in *CDI* has not been published this issue because of this probable reporting delay.

- There were 6 notifications of **Ross River virus infection**; 5 cases were male and one was female. Cases were from several 5-year age groups older than 30 years and were reported from the Northern Territory and Western Australia.
- There was one report of **dengue** from Western Australia, in a male in the age group 30-34 years.
- There were 207 notifications of **campylobacteriosis**; 119 cases were male, 81 cases were female, and the sex of 1 case was not reported. Cases were reported from all age groups from 0-4 years to 80-84 years, with 23% of cases being aged less than 5 years.
- There were 27 notifications of **gonococcal infection** received (compared to 231 in the previous 4 week period); 25 cases were male and 2 cases were female; 74% of the cases were aged between 15 and 29 years.
- Three cases of ***Haemophilus influenzae* type b infection** were reported during the period, all in children under 5 years of age, from Melbourne and Canberra.
- There were 27 cases of **hepatitis A** reported, including 19 in males and 6 in females; the sex of the remaining 2 cases not being reported. The cases were from all but one of the 5-year age groups up to 59 years. Most of the cases were reported from the metropolitan statististical divisions of Sydney and Melbourne.
- Three cases of **hepatitis B (incident)** were reported; all were males in the age range 20 to 34 years.
- One case of **hydatid disease** was notified, in a female from the Hunter statistical division of New South Wales.

Table 1. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 24 December 1995 to 6 January 1996

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[1]			
									This period 1995-96	This period 1994-95	Year to date 1996[2]	Year to date 1995[2]
Diphtheria	0	0	0		0	0	0	0	0	0	0	0
Haemophilus influenzae b infection	1	0	0		0	0	2	0	3	4	2	2
Measles	1	3	0		0	3	4	3	14	109	7	70
Mumps	0	0	0	NN	0	0	0	0	0	5	0	5
Pertussis	0	18	0		1	1	4	5	29	147	17	99
Poliomyelitis	0	0	0		0	0	0	0	0	0	0	0
Rubella	10	3	0		2	4	32	10	61	92	21	78
Tetanus	0	0	0		0	0	0	0	0	0	0	0

1. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision, so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.
2. Year to date totals are for 1 to 6 January 1995 and 1996 and are therefore lower than the totals for the corresponding reporting periods.

NN Not Notifiable.

- One case of **legionellosis** was reported, in a male from the age group 75-79 years, from the metropolitan statistical division of Sydney.
- One case of **listeriosis** was reported, a male over 85 years, also from the metropolitan statistical division of Sydney.
- Only 3 notifications of **malaria** were received (compared to 34 in the previous 4 week period); 2 were males and one was female; all were in their mid-twenties.
- Fourteen cases of **measles** were reported; 9 cases were male and 5 cases were female. Their ages ranged from 0 to 31 years.
- There were 3 cases of **meningococcal infection** reported; they included a female infant less than one year of age and a male and a female in the age group 20-24 years.
- One further case of **ornithosis** was notified from Victoria.
- There were 29 notifications of **pertussis**; 17 cases were male and 12 cases were female. All age groups between 0-4 years and 65-69 years were represented. Three cases were aged less than one year.
- Five notifications of **Q fever** were received, all from country regions of New South Wales and Victoria; 4 cases were male and the remaining case was female.
- There were 61 cases of **rubella** reported; 41 cases were male, 19 cases were female, and the sex of one case was not reported. Recorded ages of cases were from all age groups between 0-4 and 45-49 years; 38% of the cases (23) were reported in males 10-24 years of age.

Table 2. Notifications of other diseases[1] received by State and Territory health authorities in the period 24 December 1995 to 6 January 1996

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[2] This period 1995-96	This period 1994-95	Year to date 1996[8]	Year to date 1995[8]
Arbovirus infection												
Ross River virus infection	0	0	1		0	-	0	5	6	25	6	23
Dengue	0	0	0		0	-	0	1	1	0	0	0
NEC[3]	0	0	0		0	0	0	0	0	1	0	0
Campylobacteriosis[4]	7	-	7		54	6	71	62	207	315	68	223
Chlamydial infection (NEC)[5]	0	NN	3		3	6	51	10	73	175	38	92
Donovanosis	0	NN	0		NN	0	0	0	0	2	0	2
Gonococcal infection[6]	0	3	8		0	0	11	5	27	87	20	46
Hepatitis A	1	7	2		0	0	15	2	27	54	16	39
Hepatitis B	0	0	0		0	0	3	0	3	8	1	5
Hepatitis C incident	0	0	0		0	0	0	0	0	3	0	1
Hepatitis C unspecified	3	0	0		0	5	25	23	56	155	13	112
Hepatitis (NEC)	0	0	0		0	0	0	NN	0	0	0	0
Legionellosis	0	1	0		0	0	0	0	1	3	0	1
Leptospirosis	0	0	0		0	0	0	0	0	4	0	3
Listeriosis	0	1	0		0	0	0	0	1	5	0	3
Malaria	0	1	0		0	0	1	1	3	22	1	15
Meningococcal infection	0	0	0		0	0	2	1	3	12	1	5
Ornithosis	0	NN	0		0	0	1	0	1	3	0	3
Q fever	0	2	0		0	0	3	0	5	13	2	8
Salmonellosis (NEC)	1	20	8		7	6	16	20	78	158	40	100
Shigellosis[4]	0	-	3		1	0	0	0	4	14	4	12
Syphilis	1	0	0		0	1	0	1	3	34	1	25
Tuberculosis	0	2	0		0	0	3	0	5	24	2	15
Typhoid[7]	0	0	0		0	0	0	0	0	1	0	1
Yersiniosis (NEC)[4]	0	-	0		2	0	0	1	3	12	1	8

1. For HIV and AIDS, see Tables 2 and 3. For rarely notified diseases, see Table .
2. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.
3. Tas: includes Ross River virus and dengue.
4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
5. WA: genital only.
6. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
7. NSW, Vic: includes paratyphoid.
8. Year to date totals are for 1 to 6 January 1995 and 1996 and are therefore lower than the totals for the corresponding reporting periods.

NN Not Notifiable.

NEC Not Elsewhere Classified.

- Elsewhere classified

Table 3. Notifications of rare[1] diseases received by State and Territory health authorities in the period 24 December 1995 to 6 January 1996[2]

DISEASES	Total this period	Reporting States or Territories	Year to date 1996[2]
Botulism	0		0
Brucellosis	0		0
Chancroid	0		0
Cholera	0		0
Hydatid infection	1	NSW	0
Leprosy	0		0
Lymphogranuloma venereum	0		0
Plague	0		0
Rabies	0		0
Yellow fever	0		0
Other viral haemorrhagic fevers	0		0

1. Fewer than 60 cases of each of these diseases were notified each year during the period 1988 to 1994.
2. Year to date total is for 1 to 6 January 1995 and therefore lower than the total for the reporting period.

Table 4. Australian Sentinel Practice Research Network reports, weeks 51 and 52, 1996

Condition	Week 51, to 24 December 1996		Week 52, to 31 December 1996	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	9	1.4	4	1.3
Rubella	2	0.3	2	0.6
Measles	0	0.0	0	0.0
Chickenpox	10	1.6	3	1.0
Pertussis	2	0.3	0	0.0
Gastroenteritis	111	17.6	70	22.6

Figure 1. ASPREN gastroenteritis reporting rate, by month, 1995

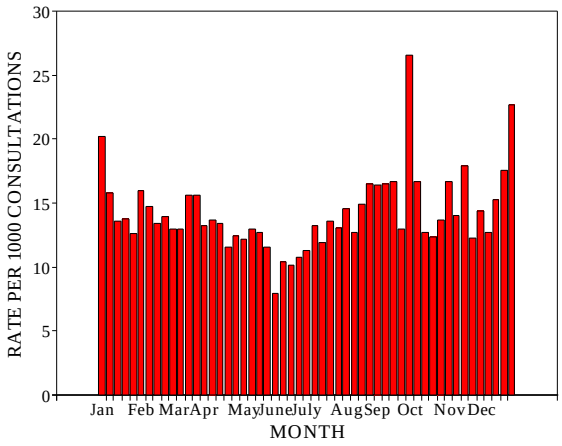
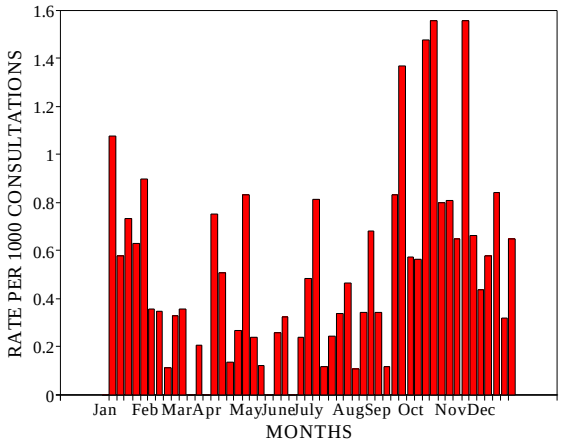


Figure 2. ASPREN rubella reporting rate, by month, 1995



- There were 78 cases of **salmonellosis** reported; 40 cases were male and 36 cases were female; the sex of the remaining 2 cases was not recorded. Thirty sever per cent of the cases were aged less than 5 years.
- Only three cases of **syphilis** were reported (compared to 85 in the previous 4 week period); 2 cases were male and 1 was female.
- There were 5 cases of **tuberculosis** reported; 2 cases were male and 3 cases were female. All were aged over 40 years.
- Three cases of **yersiniosis** were reported; one case was male, and 2 female.

Australian Sentinel Practice Research Network (ASPREN)

Data for weeks 51 and 52 (ending 24 and 31 December) are included in this issue of *CDI* (Table 4) a total of 6317 and 3091 consultations being reported respectively. The rate of reporting of gastroenteritis rose in the month of December (Figure 1) whilst that for rubella has fallen in recent weeks after peaking in October / November (Figure 2).

HIV and AIDS Surveillance

Methodological note

National surveillance for HIV disease is coordinated by the National Centre in HIV Epidemiology and Clinical Research (NCHECR), in collaboration with State and Territory health authorities and the Commonwealth of Australia. Cases of HIV infection are notified to the National HIV Database on the first occasion of diagnosis in Australia, by either the diagnosing laboratory (ACT, New South Wales, Tasmania, Victoria) or by a combination of laboratory and doctor sources (Northern Territory, Queensland, South Australia, Western Australia). Cases of AIDS are notified through the State and Territory health authorities to the National AIDS Registry. Diagnoses of both HIV infection and AIDS

Table 5. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 June to 30 June 1995 and reported by 30 September 1995, by sex and State or Territory of diagnosis

										TOTALS FOR AUSTRALIA			
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1995	This period 1994	Year to date 1995	Year to date 1994
HIV diagnoses	Female	2	1	0	3	0	0	1	5	12	7	53	45
	Male	2	28	0	7	2	0	6	3	48	66	401	439
	Sex not reported	0	0	0	0	0	0	0	0	0	1	7	8
	Total[1]	4	29	0	10	2	0	7	8	60	74	463	492
AIDS diagnoses	Female	1	0	0	0	1	0	0	0	2	3	13	17
	Male	0	12	0	6	0	0	8	1	27	65	224	387
	Total[1]	1	12	0	6	1	0	8	1	29	69	238	407
AIDS deaths	Female	0	0	0	0	0	0	2	0	2	2	16	18
	Male	2	14	0	3	2	0	9	1	31	64	250	346
	Total[1]	2	14	0	3	2	0	11	1	33	66	267	366

1. Persons whose sex was reported as transsexual are included in the totals.

Table 6. Cumulative diagnoses of HIV infection, AIDS and deaths following AIDS since the introduction of HIV antibody testing to 30 June 1995, by sex and State or Territory of diagnosis

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	AUSTRALIA
HIV diagnoses	Female	15	537	3	93	44	4	160	68	924
	Male	157	9733	79	1501	547	70	3249	719	16055
	Sex not reported	0	2048	0	0	0	0	43	0	2091
	Total[1]	172	12325	82	1599	591	74	3460	789	19092
AIDS diagnoses	Female	4	123	0	24	17	2	43	14	227
	Male	68	3371	25	562	249	32	1230	247	5784
	Total[1]	72	3504	25	588	266	34	1280	262	6031
AIDS deaths	Female	2	84	0	19	13	2	25	8	153
	Male	48	2386	18	395	163	21	953	181	4165
	Total[1]	50	2476	18	416	176	23	984	190	4333

1. Persons whose sex was reported as transsexual are included in the totals.

are notified with the person's date of birth and name code, to minimise duplicate notifications while maintaining confidentiality.

Tabulations of diagnoses of HIV infection and AIDS are based on data available three months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information. More detailed information on diagnoses of HIV infection and AIDS is published in the quarterly *Australian HIV Surveillance Report*, available from the National Centre in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Telephone: (02) 332 4648 Facsimile: (02) 332 1837.

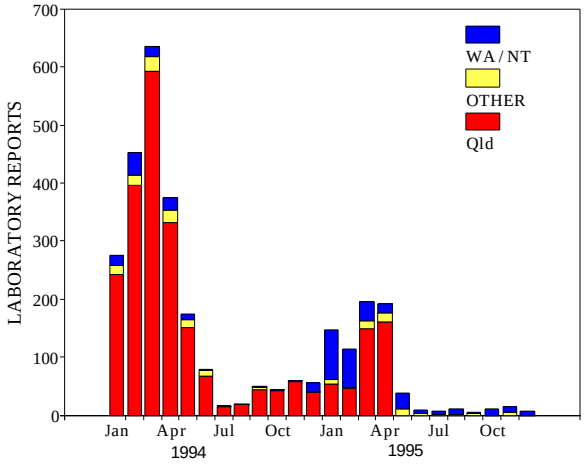
HIV and AIDS diagnoses and deaths following AIDS reported for June 1995 and cumulative to 30 June 1995, as reported to 30 September 1995, are included in this issue of *CDI* (Tables 5 and 6).

Virology and Serology Reporting Scheme

There were 2653 reports received in the *CDI* Virology and Serology Reporting Scheme this period (Tables 5, 6 and 7).

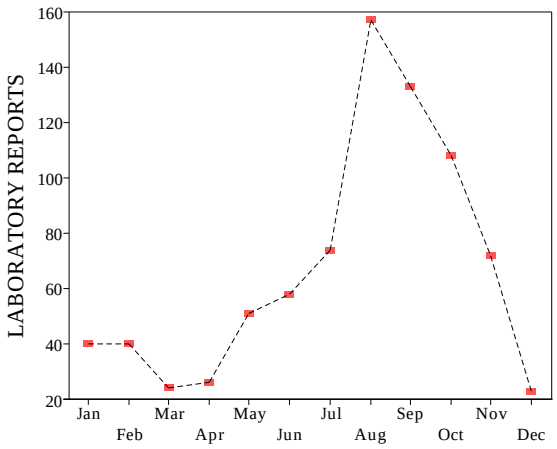
- Two reports of **measles** were received this period. The number of reports is low compared to the same period last year.
- **Rubella** was reported for 67 patients this period. Included were 28 females, 12 of whom were of childbearing age, and 38 males.
- Five reports of **mumps** were received this period from Western Australia (1), Queensland (3) and Victoria (1) diagnosed by IgM detection.
- **Hepatitis A** was reported for 30 patients this period including 21 males and 8 females (one unknown sex).

Figure 3. Ross river virus laboratory reports 1994 to 1995, by State or Territory and month of specimen collection



- Positive **hepatitis B** serology was reported for 125 patients this fortnight including 67 males and 58 females. A total of 90 reports was in the 15 to 44 years age range.
- Three hundred and twelve reports of positive **hepatitis C** serology were received this period. Included were 170 males and 138 females (4 unknown sex). Two hundred and twenty-nine reports were for the 25 to 44 years age range.
- Positive **hepatitis D** serology was reported for 3 patients this period. Diagnosis was by single high titre.
- **Ross River virus** was reported in 22 patients this period. Diagnosis was by single high titre (11) and IgM detection (11). The number of reports remains low however an increase is normally seen over the summer months (Figure 3).
- One report of **Japanese Encephalitis virus** was isolated from a 26 year old male whom had recently travelled overseas. Diagnosis was by IgM detection.
- One hundred and twenty-two reports of **adenovirus** were received this reporting period diagnosed by virus isolation (99), antigen detection (21) and single high titre (2). Untyped adenovirus reports were received for 73 patients. There were 15 reports of eye disease associated with adenovirus type 3 (12) and type 7 (3).
- **Herpes simplex virus type 1** was reported for 406 patients this reporting period. Diagnosis was by virus isolation (402) and antigen detection (4).
- Three hundred and ninety-eight reports of **herpes simplex virus type 2** were received this period diagnosed by virus isolation (395) and antigen detection (3).
- Seventy-nine reports of **cytomegalovirus** were received this period. Diagnosis was by virus isolation (27), antigen detection (7), nucleic acid detection (3) and IgM detection (42). Included were two HIV / AIDS patients and 5 transplant patients.
- **Varicella-zoster virus** was reported for 95 patients this period. Diagnosis was by virus isolation (39), antigen detection (37), nucleic acid detection (2) and IgM detection (17).
- One hundred and seventy-nine reports were received for **Epstein-Barr virus** this reporting period. Diagnosis was by virus isolation (one), four fold rise in titre (5) and IgM detection (173).
- **Parvovirus** was reported for 11 patients this reporting period. Included was an HIV positive patient who reported a recent fever, rash and aches.
- Eleven reports of **echovirus** were isolated this period. Cases were reported from New South Wales (8), Victoria (2) and the Australian Capital Territory (one). **Echovirus type 9** was isolated from a 3 males under one year of age, all diagnosed with meningitis.

Figure 4. Parainfluenza virus type 3 laboratory reports 1995, by month of specimen collection



- Sixty-three reports of **enterovirus** were received this period. Included was one report of encephalitis in a 5 month old male.
- **Rhinovirus** was reported for 41 patients this period. Cases were reported from Victoria (24), South Australia (3), Queensland (3) and New South Wales (11).
- **Influenza A** was reported for 9 patients this period. Diagnosis was by virus isolation (2), antigen detection (one) and single high titre (7). The number of reports received has continues to decline after reaching a peak in July.
- **Influenza B** was reported for 4 patients this period. Diagnosis was by virus isolation. The number of reports continued to decline this reporting period with a total of 352 reports received for 1995.
- **Parainfluenza virus type 3** was reported for 32 patients this reporting period. Diagnosis was by virus isolation (20), antigen detection (6) and single high titre (6). Reporting continues to decline after reaching a peak in August. The number of reports received for 1995 is the highest ever recorded by this scheme (Figure 4).
- Twenty-five reports of **respiratory syncytial virus (RSV)** were received this reporting period. Methods of diagnosis included virus isolation (15), antigen detection (9) and single high titre (one). Twenty-two reports were received for the under 4 years age group. The number of reports continues to decline.
- **Rotavirus** was reported for 46 patients this period. Thirty-one reports were for patients below 4 years of age. Rotavirus reporting has continued to decline since August.
- ***Chlamydia trachomatis*** was reported for 192 patients this period. Diagnosis was by isolation (35), antigen detection (32), nucleic acid detection (124) and single high titre (one). Included were 128 females and 63 males (one unknown sex).
- ***Chlamydia psittaci*** was reported for 20 patients this reporting period. Thirteen of these reports were for males. Diagnosis was by single high titre (11), four fold rise in titre (6) and IgM detection (3). Reports for the period were received from Victoria (19) and New South Wales (one). The number of psittacosis reports received for 1995 is high compared to previous years, a total of 685 reports. The male:female ratio for 1995 is 1.6:1.0. Three cases were reported as part an outbreak of respiratory disease in the North Eastern Statistical Division of Victoria.
- Twenty-nine reports of ***Mycoplasma pneumoniae*** were received this period for 15 males and 14 females. Methods of diagnosis included antigen detection (one), single high titre (2), four fold rise in titre (4), IgM detection (18) and total antibody (4).
- Eleven cases of ***Coxiella burnetii*** (Q Fever) were reported this period. Diagnosis included single high titre (4), four fold rise in titre (3) and IgM detection (4). Included was a 43 year old male who had animal exposure.
- Twenty-seven cases of **Schistosoma** species were reported this period. Seventeen cases reported overseas travel. Included was a 27 year old female who had recently returned from Africa.
- **Leptospira** species was reported for 3 cases. Included was a 28 year old male meatworker who reported myalgia, arthralgia and headaches.

Table 5. Virology and serology laboratory reports by State or Territory[1] for the reporting period 28 December 1995 to 10 January 1996 historical data[2], and total reports for the year

	State or Territory[1]								Total this fortnight	Historical data[2]	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
MEASLES, MUMPS, RUBELLA											
Measles virus							1	1	2	108.0	4
Mumps virus				3			1	1	5	4.3	6
Rubella virus		6		39	3	1	4	14	67	79.3	97
HEPATITIS VIRUSES											
Hepatitis A virus		2	1	13	1		10	3	30	17.3	40
Hepatitis B virus		24	12	56		2	19	12	125	87.3	197
Hepatitis C virus		32	23	109		15	21	112	312	255.5	426
Hepatitis D virus				3					3	1.0	4
ARBOVIRUSES											
Ross River virus		2	5	8				7	22	176.2	25
Barmah Forest virus	1			8					9	21.2	12
Japanese encephalitis virus								1	1	.0	1
ADENOVIRUSES											
Adenovirus type 1					3				3	3.5	6
Adenovirus type 2					8		2		10	3.8	12
Adenovirus type 3					13		11		24	3.8	27
Adenovirus type 7					7		3		10	.8	11
Adenovirus type 8							2		2	2.8	2
Adenovirus not typed / pending	1	10		30	13		12	7	73	75.8	206
HERPES VIRUSES											
Herpes simplex virus type 1	1	30	6	142	61	1	107	58	406	217.8	625
Herpes simplex virus type 2		34	13	143	48		97	63	398	223.0	636
Herpes simplex not typed / pending	5	9							14	34.8	44
Cytomegalovirus	3	14	3	27	1	3	18	10	79	81.5	160
Varicella-zoster virus	1	12		38	13		16	15	95	50.8	129
Epstein-Barr virus		13	5	120	17	1	8	15	179	93.8	238
Herpes virus group - not typed				1				7	8	1.3	8
OTHER DNA VIRUSES											
Contagious pustular dermatitis (Orf virus)								1	1	.3	1
Parvovirus				1	1		4	5	11	5.0	15
PICORNA VIRUS FAMILY											
Coxsackievirus B2							1		1	1.3	1
Echovirus type 9	1	4					2		7	.2	11
Echovirus type 14		3							3	.3	6
Echovirus type 22		1							1	.2	2
Poliovirus type 2 (uncharacterised)					1				1	.3	4
Poliovirus type 3 (uncharacterised)		1							1	.7	2
Rhinovirus (all types)		11		3	3		24		41	50.2	104
Enterovirus not typed / pending				34			12	17	63	62.7	122
ORTHO / PARAMYXOVIRUSES											
Influenza A virus		2		1			3	4	10	26.5	19
Influenza B virus		1		2	1				4	14.7	17
Parainfluenza virus type 2					1				1	1.2	4
Parainfluenza virus type 3	2	6		6	5		8	5	32	30.2	143
Parainfluenza virus typing pending							1		1	1.5	2
Respiratory syncytial virus	2	7		5	2		6	3	25	31.0	146

Table 5. Virology and serology laboratory reports by State or Territory[1] for the reporting period 28 December 1995 to 10 January 1996 historical data[2], and total reports for the year, continued

	State or Territory[1]								Total this fortnight	Historical data[2]	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
OTHER RNA VIRUSES											
HIV-1				16			1	1	18	3.2	19
Rotavirus		5			28	3	9	1	46	54.2	162
Norwalk agent							9		9	.7	14
Small virus (like) particle							2		2	1.0	3
OTHER											
Chlamydia trachomatis not typed	5	15	21	66	14		24	47	192	101.7	257
Chlamydia pneumoniae				1			1		2	.0	2
Chlamydia psittaci		1					19		20	8.3	34
Chlamydia species		8							8	.7	14
Mycoplasma pneumoniae		1		11	2		9	6	29	50.2	46
Coxiella burnetii (Q fever)		2		4			3	2	11	33.2	18
Rickettsia australis				1			2		3	.2	5
Streptococcus group A		4	14	46					64	13.8	64
Yersinia enterocolitica				1					1	2.2	1
Bordetella pertussis				2			31	3	36	33.2	40
Bordetella species		4	1	53					58	17.5	58
Legionella longbeachae							1		1	.3	1
Leptospira hardjo							1		1	4.2	1
Leptospira species								3	3	4.2	3
Treponema pallidum		10	6	7			1	8	32	21.2	36
Entamoeba histolytica							2	1	3	1.0	5
Toxoplasma gondii				2					2	2.2	3
Schistosoma species						2	17	8	27	.3	33
Strongyloides stercoralis		1							1	.2	1
TOTAL	22	276	110	1004	246	28	526	441	2,653	2,124.0	4,340

1. State or Territory of postcode, if reported, otherwise State or Territory of reporting laboratory.
2. The historical data are the averages of the numbers of reports in 6 previous 2 week reporting periods: the corresponding periods of the last 2 years and the periods immediately preceding and following those.

Table 6. Virology and serology laboratory reports by clinical information for the reporting period 28 December 1995 to 10 January 1996

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
MEASLES, MUMPS, RUBELLA													
Measles virus								1				1	2
Mumps virus												5	5
Rubella virus								21		3		43	67
HEPATITIS VIRUSES													
Hepatitis A virus						2	14					14	30
Hepatitis B virus							24					101	125
Hepatitis C virus					1		77	1				233	312
Hepatitis D virus							3						3
ARBOVIRUSES													
Ross River virus								1		5		16	22
Barmah Forest virus										4		5	9
Japanese encephalitis virus	1												1
ADENOVIRUSES													
Adenovirus type 1					3								3
Adenovirus type 2					9							1	10
Adenovirus type 3					10	1			12			1	24
Adenovirus type 7					7				3				10
Adenovirus type 8									2				2
Adenovirus not typed / pending					24	23			12		1	13	73
HERPES VIRUSES													
Herpes simplex virus type 1					17			182	19		94	94	406
Herpes simplex virus type 2		1			2			107			227	61	398
Herpes simplex not typed / pending								1			2	11	14
Cytomegalovirus				1	12		2		1		1	62	79
Varicella-zoster virus					1			70				24	95
Epstein-Barr virus					20		2	2			1	154	179
Herpes virus group - not typed								7	1				8
OTHER DNA VIRUSES													
Contagious pustular dermatitis (Orf virus)								1					1
Parvovirus								4		1		6	11
PICORNA VIRUS FAMILY													
Coxsackievirus B2					1								1
Echovirus type 9		4										3	7
Echovirus type 14						1						2	3
Echovirus type 22												1	1
Poliovirus type 2 (uncharacterised)					1								1
Poliovirus type 3 (uncharacterised)						1							1
Rhinovirus (all types)					34							7	41
Enterovirus not typed / pending	1	3	5		24	5		3				22	63

Table 6. Virology and serology laboratory reports by clinical information for the reporting period 28 December 1995 to 10 January 1996, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
ORTHO/PARAMYXOVIRUSES													
Influenza A virus					5							5	10
Influenza B virus												4	4
Parainfluenza virus type 2					1								1
Parainfluenza virus type 3			1		25							6	32
Parainfluenza virus typing pending					1								1
Respiratory syncytial virus					22							3	25
OTHER RNA VIRUSES													
HIV-1					1							17	18
Rotavirus						46							46
Norwalk agent						9							9
Small virus (like) particle						2							2
OTHER													
Chlamydia trachomatis not typed					2			2	1	1	151	35	192
Chlamydia pneumoniae					1						1		2
Chlamydia psittaci					7							13	20
Chlamydia species												8	8
Mycoplasma pneumoniae					17			1				11	29
Coxiella burnetii (Q fever)												11	11
Rickettsia australis												3	3
Streptococcus group A					6	1		5		3		49	64
Yersinia enterocolitica												1	1
Bordetella pertussis					35							1	36
Bordetella species					32			1				25	58
Legionella longbeachae					1								1
Leptospira hardjo												1	1
Leptospira species												3	3
Treponema pallidum				1							6	25	32
Entamoeba histolytica												3	3
Toxoplasma gondii												2	2
Schistosoma species						1		1				25	27
Strongyloides stercoralis												1	1
TOTAL	2	8	6	2	322	92	122	411	51	17	485	1135	2653

Table 7. Virology and serology laboratory reports by contributing laboratories for the reporting period 28 December 1995 to 10 January 1996

STATE OR TERRITORY	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Canberra	2
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	73
	Royal Alexandra Hospital for Children, Camperdown	4
	Royal North Shore Hospital, St Leonards	20
	Royal Prince Alfred Hospital, Camperdown	7
	South West Area Pathology Service, Liverpool	90
Queensland	Nambour Hospital	
	Queensland Medical Laboratory, West End	993
	State Health Laboratory, Brisbane	33
South Australia	Institute of Medical and Veterinary Science, Adelaide	244
Tasmania	Royal Hobart Hospital, Hobart	20
Victoria	Microbiological Diagnostic Unit, University of Melbourne	7
	Monash Medical Centre, Melbourne	78
	Royal Children's Hospital, Melbourne	0
	Unipath Laboratories	47
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	283
Western Australia	PathCentre Virology, Perth	308
	Western Diagnostic Pathology	84
TOTAL		2653